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ABSTRACT

The general program at Robinson Elementary School was supported by two compensatory programs, one federally funded under Title I of the 1965 Elementary Secondary Education Act and one locally funded. 24 pupils who were considered to be the most educationally deprived by virtue of standardized test scores were selected for the Title I English-Reading Activity. In March, when two more staff members were employed by Title I, an additional 19 pupils were selected for participation during the remainder of the school year. The primary objective of the Title I program was to improve the reading competencies of the most academically deprived pupils through tutorial and/or individualized instruction. Medical assistance was available to Title I pupils in the form of eyeglasses and hearing aids. The Comprehensive Instructional Program is a locally conceived and funded project designed to improve instruction in the elementary grades. Pupils in grades one through three were diagnostically tested three times during the year in reading skills. Teachers received detailed information from the results, including data about the performance of each child on each item. Teachers worked together by grade level to identify the needs of their pupils. In some instances, grade levels combined for more comprehensive and inclusive identification. (Author/JM)

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RESEARCH AND DEVELOPMENT REPORT

Vol. VII, No. 11 October, 1973

DEFINITION OF SINGULAR GRADE LEVEL OBJECTIVES BY CLASSROOM TEACHERS

ROBINSON ELEMENTARY SCHOOL
1972-73

Roy Wolfe
Principal

Alfred Scott
Assistant Principal

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I. RATIONALE

Ralph C. Robinson Elementary School has received Elementary and Secondary Education Act (ESEA) Title I funds for the past six years and again qualified for federal aid for the 1972-73 school year. As a recipient of Title I funds this year, it shared the staff and funds that were provided in the program with nearby Boyd Elementary School. Boyd School is a new school which absorbed approximately one-half of the Robinson School pupil population when it opened in March, 1972, including the entire seventh grade. Since the enrollment at Boyd School included many other pupils of a higher economic status and a higher achievement level, the school could not qualify for federal assistance and former Robinson School pupils were to be denied the compensatory programs which they needed. In order to allow Robinson School pupils who had been transferred to Boyd School to qualify for Title I aid, the two schools were considered as one and were designated to share compensatory staff and funds. In the general program, the schools operated separately but with only one principal. An assistant principal was employed at Robinson School to administer the program in the absence of the principal who was stationed at Boyd School.

Implementation of the Title I program this year required that compensatory reading instruction be provided only to the lowest in achievement. Therefore, evaluation of the effects of the additional services included mainly an analysis of the progress of participating pupils. However, the general program also was expected to benefit indirectly from the addition of personnel and materials provided by the compensatory program. Thus, consideration of the general program was made in the evaluation of Title I at Robinson Elementary School. This consideration was directly related to the goals and objectives defined by the faculty for the current school year.

II. INTRODUCTION

Robinson Elementary School is located in west Atlanta on the edge of what is generally known as the Perry Homes Community. Pupils come mainly from the low-income, federal housing project called Perry Homes, but also from the recently completed, privately-owned Rockdale Apartments. Few, if any, children live in one-family dwellings. The family incomes are very low, as evidenced by 98 per cent pupil participation in the free lunch program.

Approximately 330 children were enrolled in the school during the 1972-73 school year in kindergarten through the sixth grade. Attendance averaged somewhat higher this year than last, with an average percentage of attendance of 91. Migration into and out of the school was quite frequent causing a mobility index of 0.24.

Although the opening of Boyd Elementary School reduced the population of Robinson School to approximately 200 pupils in March, 1972, the nature of the population remained relatively constant. Even the influx of pupils from the new housing development in September did not alter considerably the backgrounds or needs of the children. All pupils were considerably below grade level in reading achievement and many demonstrated the need for remedial services. Thus, the emphasis of the instructional program remained on reading as it had been in previous years. In the current year, however, concentration expanded from the primary grades to all grade levels.

III. NEEDS OF THE PUPILS

Teachers at Robinson School worked together by grade level to identify the needs of their pupils. In some instances, grade levels combined to allow for more comprehensive and inclusive identification. The following needs were identified:

A. To acquire or improve basic reading skills and reading comprehension.

B. To improve communication skills, including social interaction skills.

C. To increase knowledge of mathematical concepts and computation skills.

D. To improve self-concept through better understanding of self and other people.

E. To improve self-confidence through successful academic experiences.

IV. PROGRAM GOALS

The following goals were determined as appropriate to meet the identified needs of the pupils:

A. To provide an instructional program to improve basic reading skills and reading comprehension at each child's level of proficiency.

B. To provide a mathematics program designed to improve basic computation skills and understanding of mathematics concepts at each child's level of proficiency.

C. To provide pupils with activities and self-instructional materials that allow them to advance at their own rate and to monitor their own success.

D. To provide enrichment experiences for the children through movies, filmstrips, community resources, music, and art.

E. To provide an instructional program that stresses the worth and dignity of man.

V. BEHAVIORAL OBJECTIVES

The following behavioral objectives were designed as a measure of the effectiveness of the established goals, particularly of the reading program which was supplemented by the compensatory Title I program. Instruments for evaluating achievement were selected on the basis of their relevance to the program of each grade level.

Kindergarten

A. Eighty per cent of the kindergarten pupils will demonstrate their readiness for first grade by completing the Basecheck with 90 per cent accuracy in May, 1973.

First Grade

B. To demonstrate their mastery of pre-reading and beginning reading skills, 80 per cent of the first grade pupils will complete the Comprehensive Instructional Program (CIP) subtests A1 through B4 with 90 per cent accuracy and 20 per cent will complete subtests A1 through C3 with 80 per cent accuracy by the final administration of the CIP test in March, 1973.

Second Grade

C. Pupils will complete the reading book to which they were initially assigned in September by March of the school year and will demonstrate their preparedness for the next book by scoring average or above on the appropriate developmental test.

Third Grade

D. Pupils will demonstrate a positive attitude toward school by completing at least 85 per cent of their homework assignments as recorded in the teacher's grade book.

E. On the Iowa Tests of Basic Skills (ITBS), administered in April of 1973, 25 per cent of the pupils will score on or above the city-wide average and 50 per cent will score within one year of the city-wide average.

Fourth Grade

F. Seventy-five per cent of the pupils will increase their skills in vocabulary and reading comprehension by gaining at least five months on the Iowa Tests of Basic Skills (ITBS) between October, 1972, and April, 1973.

Fifth and Sixth Grades

G. Eighty per cent of the pupils will show mastery of basic reading skills by completing the Scott, Foresman Inventory-Survey Test with 70 per cent accuracy in May of 1973.

Title I

According to the grant proposal, pupils participating in the Title I program will achieve the following objectives:

H. Pupils will show a gain of at least one month for each month of instruction in the following areas:

1. Word knowledge
2. Word analysis
3. Reading.

I. Pupils will demonstrate more positive attitude than similar pupils who do not participate in the activity.

J. Pupils will show improvement in self-concept. The desired change will be statistically significant at the .05 level.

VI. CRITICAL VARIABLES

The exact variables in which the faculty hoped to observe change included the following:

A. Pre-reading skills.

B. Reading skills

1. Vocabulary
2. Word attack.

C. Reading comprehension.

D. Completion of homework assignments.

E. Attitude toward school.

F. Self-concept.

VII. SUPPORTIVE PROGRAMS

The general program at Robinson Elementary School was supported by two compensatory programs, one federally funded and one locally funded.

Elementary and Secondary Education Act (ESEA), Title I

Funds provided by the Title I program for Robinson School were shared with Boyd Elementary School. As previously explained, this situation arose in order to accommodate the large number of Robinson School pupils who were transferred to Boyd School and who were in need of remedial services. Since the proposal specified the total number of pupils who could participate from the two schools, the proportion of Robinson School pupils who could take part in the program equalled the proportion of the entire Robinson School enrollment to the total enrollment of the two schools. Consequently, 24 pupils who were considered to be the most educationally deprived by virtue of standardized test scores, were selected for the Title I English-Reading Activity. In March, when two more staff members were employed by Title I, an additional 19 pupils were selected for participation during the remainder of the school year.

The primary objective of the Title I program was to improve the reading competencies of the most academically deprived pupils through tutorial and/or individualized instruction. By improving academic performance, Title I also sought to enhance pupils' self-concepts and attitudes toward school. A lead teacher and an educational aide administered the program at the school from September until March. In March, an additional aide was employed, and in April a certified teacher was assigned to the program full time. The lead teacher spent one full day each week at the school to work with the pupils, to observe the aide, and to direct and plan the

pupils' program. Her responsibilities also encompassed coordinating the program, directing testing, providing inservice training for the aides and teachers of the participants, and directing parent involvement. The educational aides provided individual and small group instruction, assisted the classroom teachers of Title I pupils, and conferred with parents about the pupils' participation in the program. When the certified teacher was employed in April, she worked with those pupils referred to her by the aides as requiring further diagnosis and prescription.

Medical assistance was available to Title I pupils in the form of eyeglasses and hearing aids. The social worker for the school arranged for vision and hearing screenings and referred children who failed the screenings to the public health nurse. Two of these pupils were recommended for eyeglasses. Those pupils who were referred for additional hearing tests had not received them at the close of the school year. The social worker intended to pursue the matter into the summer.

Funds for new materials were allocated by quarter and were allocated jointly for the two schools. Because of the limited amount of money that was available, the lead teacher had to wait until the second quarter funds were available before enough was accumulated for the desired materials. The total allocation was $531.00 or $4.50 per pupil. Two sets of Barnell-Loft's Specific Skills Series and Read-On by the MacMillan Publishing Company were purchased but did not arrive until May. Since these were purchased for both schools, Robinson School maintained only one set of the Specific Skills Series.

Comprehensive Instructional Program (CIP)

The Comprehensive Instructional Program (CIP) is a locally conceived and funded project designed to improve instruction in the elementary grades. Pupils in grades one through three were diagnostically tested three times during the year in reading skills. Teachers received detailed information from the results, including data about the performance of each child on each item.

VIII. MANAGEMENT AND CONTROL

Administration

The Superintendent of the Atlanta Public Schools is appointed by the Board of Education and is authorized to administratively direct the instructional program of the school system. Under his direction, five area superintendents administer the programs of the schools of the five geographic areas which comprise the system. Six assistant superintendents supervise the six divisions of supportive services to the instructional program. These divisions are: (1) Research and Development, (2) Staff Personnel Services, (3) Instruction, (4) School Plant Planning and Construction, (5) Administrative Services, and (6) Comptroller.

The Assistant Superintendent for Research and Development and his staff are responsible for developing new programs, evaluating the effectiveness of program activities, and disseminating information.

The Assistant Superintendent of Staff Personnel Services and his staff are responsible for meeting the staffing needs of the instructional programs within the schools and the project activities.

Inservice training for teachers, staff development activities, and curriculum development are directed by the Assistant Superintendent for Instruction and his staff. Within this Division, the directors and coordinators of federal, state, and local projects and various curriculum areas work with the staffs of other divisions, the area office, the principal, and the teachers to implement programs and provide for the training needs of the school personnel.

Through the area office, schools have access to the services of psychologists, counselors, resource teachers, and coordinators of compensatory programs. In Area III where Robinson School is located, the services of the Title I coordinator were somewhat hampered by his additional responsibilities for the Comprehensive Instructional Program (CIP) and his position as general resource teacher. Teachers at Robinson School often expressed concern about their inability to obtain the services of the area psychologists. In the past many pupils who were suspected to be educable mentally retarded had never been tested despite repeated requests to the area office. However, their persistence during the 1972-73 school year resulted in the testing of most of the pupils who were referred.

At the local school level, the principal is responsible for the administrative aspects of the school program. Among the administrative responsibilities of the principal are the assignment of teachers to classes, conferring with parents, involving the community, and the supervision of instructional staff development activities.

The principal of Robinson Elementary School was also the principal of Boyd Elementary School where he had his office. Such dual responsibilities necessitated the hiring of an assistant principal who was assigned solely to Robinson School. In this capacity, he performed most of the administrative duties of the principal and was directly responsible to him.

Staffing

Twelve teachers, six of whom were new to the school, instructed pupils in kindergarten through the sixth grade. A teacher of the educable mentally retarded worked with 16 pupils at various times during the day when they reported to her for special instruction. A full-time librarian and part-time teachers in the areas of music and physical education, and a part-time social worker completed the regular staff.

No staffing problems occurred in the general funds program but several problems occurred in the staffing of the Title I program. The aide that was assigned to Robinson School was not employed until September 20 and, therefore, missed the inservice training provided during pre-planning. However, with some initial training from the lead teacher, the aide functioned very capably in getting the program started. In December, when funds became available for another aide and a certified teacher, a considerable amount of time was wasted by paperwork and misunderstandings before the personnel were finally assigned. The three months that elapsed caused the 19 new participants to be without remedial services when they were desperately needed. Generally, the staffing situation which called for the lead teacher to divide her time between the two schools was inconvenient to the personnel, but the effects on the pupils' progress probably cannot be determined. The aide who functioned alone for six months was extremely capable in her position and very concerned about the children. Total cooperation from the assistant principal and from the librarian aided her considerably in getting the materials and the classroom conditions that were required.

Instructional Organization

All of the classrooms operated within self-contained units with no departmentalization. Pupils were assigned according to grade level except for one classroom with both fifth and sixth grade pupils. One kindergarten session operated during the morning.

The Scott, Foresman Open Highways Series provided the reading text for all grades, although the Starter Series was used for slow children. Supplementary reading materials were available from the library upon request as were various kinds of audio-visual equipment.

Program Planning and Inservice Training

Faculty meetings were held once a week for administrative purposes and were conducted by the assistant principal. Meetings by grade level once a month were held for instructional planning. There were also meetings of the primary level teachers and the intermediate level teachers three times during the year for planning and coordination of the program.

Two school-wide workshops were planned for the year but only one occurred. Teachers met to exchange ideas on teaching art in a workshop in the fall. The cancelled workshop concerned social studies.

IX. PROCESS

The Scott, Foresman Inventory-Survey Test was administered to all pupils in the beginning of the year to place them in books of the Scott, Foresman Series that were appropriate to their levels of achievement. Results of the test usually necessitated that each teacher conduct reading on more than one level within her own class, since there was no departmentalization or homogeneous grouping. As pupils completed the books to which they were initially assigned, teachers administered the developmental test that accompanied the book before placing them on the next level.

First grade teachers attempted to interest pupils in reading by compiling booklets of newspaper articles with both the printed article and a brief summary easily read by the pupils. Teachers noted pupils' eagerness to read at least the headlines of the newspaper by the end of the year. Another project in the first grade involved creating a booklet of short autobiographies of famous black people. This technique of reading instruction employed in the first grade was an experimental approach designed by one of the teachers Generally, she sought to evolve pupils' personal experiences into reading activities and to avoid the emotional conflict caused by books with unfamiliar experiences.

To encourage independence in reading and awareness of progress and success, pupils of the fourth grade used Sullivan Reading materials that were self-instructional in nature. Self-instructional materials in mathematics further reinforced the independent learning process.

In the fifth and sixth grades, science and social studies were combined in the program, Man: A Course of Study. This course aimed to improve the confidence of the pupils through understanding of man as he relates to other animals, and to promote concern for the human condition in all its forms, whatever race or culture. The course stressed interpersonal communications and analysis of the social world in addition to nature study and experimentation.

Pupil participants in Title I were tested initially with diagnostic instruments to determine the exact level of their achievement. Follow-up testing was done at the beginning of each quarter with the Comprehensive Instructional Program (CIP) diagnostic tests to provide continuous assessment of pupil progress. Each child received small group instruction from the aides in the resource room three days a week. On the other two days, the aides assisted the pupils in the classroom under the guidance of the classroom teacher.

When the certified teacher was assigned in April, she worked to improve the individualization of the program. The aides referred pupils to her for further diagnosis, after which the pupil returned to the aides who received new prescriptions and suggested materials from the certified teacher. This was especially valuable for pupils who were further behind than their peers.

Materials used in the individualized reading instruction under Title I included the Ginn Series, the MacMillan Basal Reading Series, the Webster Classroom Reading Clinic, the Talking Alphabet and numerous audio-visual materials. Individual workbooks were not available for all pupils so dittoed copies of lessons from the Word-Power Series were used. The Hurley Series provided pupils with pleasure reading books at their own levels of proficiency.

Although some attempt was made to involve parents in the Title I program, little cooperation was received. On one occasion when parents were invited for individual conferences, only three responded.

X. EVALUATION

Research Design

In order to evaluate specified behavioral objectives, the following instruments were administered:

A. The Basecheck, a locally devised preschool test, was administered to pupils in kindergarten in May of the school year to determine their readiness to enter the first grade.

B. The Comprehensive Instructional Program (CIP) diagnostic tests were administered once each quarter to all pupils in the primary grades. The results of the test administered in March to the first grade were used to evaluate the objective for those pupils in the areas of seeing and hearing likenesses and differences, the relationships between sounds and visual symbols, and hearing sounds in words.

C. The developmental test following the books More Power, Rolling Along, and Ready to Roll were administered to pupils assigned to those books to determine their readiness for the next book.

D. The Iowa Tests of Basic Skills (ITBS), published by Houghton Mifflin, Inc., 1971, was administered to all pupils throughout the school system in April of the school year. Additionally, fourth grade pupils took another form of the same test in October through the Department of Education of the State

of Georgia. Results of the tests were used in evaluation of the behavioral objectives for the third and fourth grades. Analysis of the results for all grade levels was made to suggest the progress of the entire school toward its goals and to report the general standing of the pupils.

E. The Inventory-Survey Test, constructed by the Scott, Foresman Publishing Company to assist teachers in placement, was to be administered to pupils in the fifth and sixth grades in both September (for placement) and May (for evaluation of change).

F. The reading subtest of the Metropolitan Achievement Tests (MAT), published by Harcourt, Brace, Jovanovich, 1971, was adminstered to pupil participants in the Title I program in October and May of the school year. Mean gain scores in word knowledge and reading were used to determine if pupils met the behavioral objective requiring a month of gain for each month in the program. Although word analysis was also an area specified in the objective, posttests for grades two through six did not measure that skill so the objective was not evaluated in those terms.

G. The Self-Appraisal Inventory (SAI) was constructed by the Instructional Objectives Exchange to measure self-concept as it relates to peers, family, school, and general self-esteem. It was administered to Title I pupils of grades four through six twice during the school year to test for change in self-concept and attitude toward school. A t test of means was used to determine if the change was significant at the .05 level.

Evaluation of Behavioral Objectives

A. Kindergarten

The objective for the kindergarten class required that 80 per cent of the pupils would complete the Basecheck with 90 per cent accuracy when the test was administered in May. In fact, only 26 per cent performed with 90 per cent correct. However, another 53 per cent scored between 80 and 89 on the test, totaling 79 per cent who scored 80 or better. Pupil performance possibly would have met the objective had the teacher not become ill for the last two months of the school year. Not only was she unable to complete her own program, but the tests were administered by a tester unfamiliar to the pupils and a student of a child care program.

B. First Grade

Both first grade classes aimed for the same behavioral objectives. Although the objective read that 80 per cent of the pupils would complete A1 - B4 with 90 per cent accuracy and 20 per cent would complete A1 - C3 with 80 per cent accuracy, it was interpreted to mean that 80 per cent would complete A1 - B4 with 90 per cent accuracy and 20 per cent would complete C1 - C3 with 80 per cent accuracy. When the classes were considered together, the objective was met for four of the eight A subtests, where pupils scored well on matching letters and seeing likenesses and differences; two of the four B subtests, where pupils recognized the alphabet but did not know sight words; and the three C subtests that test the pupils' knowledge of initial and final sounds. If each class were considered separately, one class met the objective for seven of those same nine subtests, failing the two that test for seeing likenesses and differences. The other class met the objective for subtests A1 - B2 except for A5, and for subtests C1 - C3. These subtests covered hearing likenesses and differences and hearing rhyming words, plus those subtests already described. A5 tested for hearing similar ending sounds, a skill with which underprivileged children in other parts of the system also have had difficulty. At least 60 per cent of the pupils in the same class mastered the other required tests. Table 1 contains more detailed data.

Observation of standardized reading scores for these two classes showed very high results but no real differences between groups. The mean score in reading comprehension was 2.3, six months above grade level, for one group, and 2.1, four months above average, for the other. Such high performance may be partly attributable to the techniques of instruction employed by these teachers. The technique was described in Section IX and basically relates reading to a child's personal experience and the events around him. The teacher who developed the technique at Robinson School has met with sufficient success to enjoy being asked to conduct a workshop for teachers at the University of Georgia in Athens.

C. Second Grade

Pupils of the second grade were required to finish the reading book to which they were initially assigned by March and to complete the developmental test for that

book with at least an average score. Data were received from only one of the two second grade teachers, although assurances were made that all data would be received by the close of school. The class for which data were available generally met the objective. The six pupils in Rolling Along completed the book on March 3 and scored from 71 to 88 on the test. Pupils in Moving Ahead completed the test with higher scores but did not complete the book until June 1. Five pupils in the class were either Title I participants or designated as educable mentally retarded and were not tested. A possible misunderstanding may have been implied by the lack of testing for Title I pupils. As Title I participants, their activities outside of the classroom were compensatory in nature and not to take the place of classroom instruction. However, the teachers had assigned them to a reader so this conjecture may be unfounded.

TABLE 1

PERCENTAGE OF FIRST GRADE PUPILS MEETING THE BEHAVIORAL OBJECTIVES FOR THE COMPREHENSIVE INSTRUCTIONAL PROGRAM DIAGNOSTIC TESTS

Subtest	Group A	Group B	Total
A1	100	33	66
A2	100	38	68
A3	100	91	93
A4	100	91	93
A5	65	19	42
A6	90	19	54
A7	90	71	81
A8	100	57	78
B1	100	90	95
B2	100	76	88
B3	65	48	56
B4	70	43	56
C1	65	43	54
C2	65	24	44
C3	50	38	44

Standardized reading scores for the two second grade classes were 1.5, for the class with the previously described data, and 3.0 for the other group. Traditionally there is no homogeneous grouping in this school. The 1.5 score corresponded to the level of instruction for pupils in that grade who were using Book 1 and Book 2 of a remedial series. The high scoring class, for which no other data were available, should be watched very carefully to determine if their achievement is maintained during the next school year. It was discovered that this class had the assistance of the kindergarten teacher during most afternoons. She worked with individuals and small groups on reading skills and comprehension.

D. Third Grade

The two teachers of the third grade wrote behavioral objectives for their class to measure attitude toward school and academic achievement relative to the city-wide norms. Attitude toward school was evaluated in terms of completion of homework assignments. Each teacher chose subject areas related to reading and kept records of homework that was handed in for these areas. The objective was an 85 per cent completion rate in English, reading, and spelling for one teacher, and 85 per cent completion of assignments in phoneme-graphame relationships, word study, comprehension, pre-dictionary skills, spelling, and number work for the other teacher. In the first class, 25 out of 30 children met the objective. In the second class, however, only 13 out of 28 pupils completed the assignments to the teacher's satisfaction.

The second objective written for the third grade required that 25 per cent of the pupils score on or above city-wide averages on standardized tests, and 50 per cent score within one year of city-wide averages. Table 2 shows the comparison data. The objective was met for all reading-related subtests except spelling where it was off by only three percentage points, and the objective was also met for the math concepts and math problems subtests. Generally speaking, one-third of the pupils were performing at the system average and about 80 per cent were scoring from one year behind the city average to well beyond it.

TABLE 2

COMPARISON OF ROBINSON ELEMENTARY SCHOOL'S THIRD GRADE SCORES TO THE CITY-WIDE AVERAGES ON THE IOWA TESTS OF BASIC SKILLS

Subtest	City-Wide Mean	Percentage of Robinson School Pupils: On or Above City-Wide Mean	Percentage of Robinson School Pupils: Less Than 1 Year Behind City-Wide Mean	Percentage Meeting the Behavioral Objective
Vocabulary	2.7	53	35	88
Reading Comprehension	2.8	33	56	89
Spelling	3.2	23	49	72
Capitalization	3.0	46	42	88
Punctuation	3.2	33	42	75
Language Usage	2.8	33	63	96
Math Concepts	2.7	32	63	95
Math Problems	2.7	48	48	96

E. Fourth Grade

In the fourth grade where the Iowa Tests of Basic Skills (ITBS) was administered in both October and April, the objective was for 75 per cent of the pupils to increase their test scores in vocabulary and reading comprehension by at least five months. The objective was not met. Thirty-six per cent of the pupils gained five months or more on both of the tests. The mean gain on the vocabulary test was one month and the mean gain on the reading comprehension test was one-half of one month.

While the pupils' gain scores prevented them from achieving their behavioral objectives, their posttest scores were not entirely disappointing. Standardized test scores are based on the scores of the "average" child. The Robinson School pupils have demonstrated from past achievement, attendance, mobility, and socioeconomic status that they do not compare to the normed population. Accounting for these factors, the fourth grade pupils scored two months higher than predicted in reading comprehension. From the third grade scores of the previous year, it was observed that mean scores in reading changed from 2.29 in April of 1972 to 3.22 in October of 1972 to 3.28 in April of 1973. All of the measured gain seemed to occur over the summer months. Even though a number of children attended summer school, these scores were not logical. One of the teachers suggested that most pupils were so far behind grade level that the test could not discriminate enough to monitor change. The standardization process described in the test manual discredits that idea. However, as proof of his point, the teacher suggested the names of the six children whom he felt were capable of reading the test and answering the questions without undue guessing. Four of these made gains of five, ten, eleven, and twelve months. The other two either remained constant or dropped one month. Further investigation into this problem, including experimentation with reading-level testing, as opposed to grade-level testing, seems warranted.

F. Fifth and Sixth Grades

According to the stated behavioral objectives, pupils of grades five and six were to receive the Inventory-Survey Test of the Scott-Foresman reading series at the close of

the school year. Eighty per cent were expected to perform with 70 per cent accuracy on the test. No data were received from the teachers of those grades for this test. Therefore, the Iowa Tests of Basic Skills (ITBS) scores in reading were observed for pupils' achievement and general standing.

Pupils of the fifth and sixth grades gained four and two months respectively over their previous year's standardized reading scores. In vocabulary, for each grade, the gains were nine and eight months respectively, acceptable gains for a year's time. Generally, achievement in these grades was very poor. Even on the basis of predicted scores, where the prediction accounted for past achievement, socioeconomic status, and other factors, pupils were not effective. Fifth grade pupils scored three months less than expected and sixth grade pupils scored four months less than expected in reading. The instructional grouping for these grades divided the pupils into one fifth grade class, one sixth grade class, and one combination, all in self-contained units. The record of poor achievement in these grades, when the first and second grades performed so well, demands the attention of the staff and consideration of the causes.

G. Title I

Pupils of the Title I program were administered the Metropolitan Achievement Tests (MAT) reading subtests in October and May. Grade equivalent scores were used to determine if pupils had met the objective of one month's gain for each month of instruction, or seven months gain between the tests, in word knowledge and reading comprehension. The gains made by pupils who were enrolled in the program for the entire year, as seen in Table 3, were far beyond the expectations for Title I pupils who were selected because they were the lowest achievers in the school. The scores were questionable as to their validity, especially when comparison to the pupils' scores on the Iowa Tests of Basic Skills (ITBS) yielded many large discrepancies. This is not meant to imply that no gains were made. The program was fairly well coordinated and the staff was very able. Pupils were obviously advancing but not to the levels indicated by the MAT scores. The scores of the pupils who entered the program in March, listed in Table 4, also suggested that some irregularities may have existed

in the testing procedures. In this school, the lead teacher was able to spend only one day per week due to the sharing of funds with another school. Perhaps sufficient supervision over the staff and pupils was not possible to avoid such irregular results.

TABLE 3

RESULTS OF THE READING SUBTESTS OF THE STANDARDIZED READING TESTS FOR TITLE I PUPILS*

Grade	Number of Pupils	MAT Scores		ITBS Scores	Per Cent Gaining at Least 7 Months on the MAT
		Pretest	Posttest	Posttest	
Word Knowledge					
2	3	1.3	4.2	3.3	100.0
3	5	1.6	3.8	3.4	100.0
4	4	2.2	4.4	2.7	100.0
5	5	3.0	5.9	3.7	100.0
6	3	3.4	8.5	3.9	100.0
Reading Comprehension					
2	3	1.5	4.1	2.6	100.0
3	5	1.8	2.9	2.1	100.0
4	4	2.0	2.8	3.1	50.0
5	5	3.2	5.4	3.9	100.0
6	3	3.6	5.5	4.1	100.0

*Only pupils with both pretest and posttest scores were considered.

TABLE 4

RESULTS OF READING SUBTESTS OF STANDARDIZED ACHIEVEMENT TESTS FOR PUPILS WHO ENTERED THE TITLE I PROGRAM IN MARCH, 1973

Grade	Number of Pupils	Word Knowledge		Reading	
		MAT	ITBS	MAT	ITBS
2	3	2.8	3.3	2.7	1.6
3	5	2.4	2.6	3.2	2.2
4	4	4.4	3.0	3.0	2.9
5	4	4.8	3.1	4.5	2.6
6	3	4.8	3.6	4.7	3.8

Upper level participants in the Title I program also answered the Self-Appriasal Inventory (SAI) to determine changes in self-concept and attitude toward school and to determine if the change was significant at the .05 level. Only the scores of pupils who participated for the entire year were used in the statistical analysis. The results of the dependent t test, recorded in Table 5-A, were not significant for either the total score or any of the four subtests which included peer-related, family-related, school-related and general self-esteem scores. Another statistical test of independent means was done between the posttest scores of pupils who enjoyed a whole year in the program and the scores of those pupils who entered in March. The data in Table 5-B indicate that no significant difference was evident. Although the program specifically aimed to improve self-concept, this failure to meet the behavioral objective should not be viewed with undue alarm. Except in the fourth grade, pupils' scores usually reflected a much more positive attitude than a negative attitude. To measure change from a positive attitude to a more positive attitude over a six-month period would require a very sensitive instrument.

TABLE 5

RESULTS OF THE SELF-APPRAISAL INVENTORY ADMINISTERED TO TITLE I PUPILS IN GRADES FOUR THROUGH SEVEN

A. Pretest vs. Posttest

Subtest	N	Means		t-Ratio
		Pretest	Posttest	
Peer	11	10.1	11.5	1.81
Family	11	12.8	11.9	-0.70
School	11	12.5	10.9	-1.07
General	11	11.9	11.9	0.00
Total	11	47.4	46.2	-0.36

B. September Entries vs. March Entries on Total Test Score in April

	N	Mean	t-Ratio
September	11	46.2	0.43
March	13	44.7	

Analysis of Current and Longitudinal Test Data

The 1972-73 scores on the Iowa Tests of Basic Skills (ITBS) were comparable to national norms in only the first and second grades. Grades three through six averaged from 1.5 to 2.6 years behind the norms in reading and from 1.3 to 1.7 years behind the norms in mathematics. Based on a formula of the norm divided by the mean score, a national achievement index was obtained for each grade level. The index was considered acceptable by the Research and Development Division which conducted the study, if it was greater than or equal to 90. In the second grade the indices for reading and mathematics were 91 and 96 respectively. Indices for other grades were 75 or less. The average national

achievement index for the second through sixth grades was 68 in reading and 75 in mathematics. The first grade was not included in the study but both of its indices would have been over 100. See Table 6 for more detailed data.

TABLE 6

ACHIEVEMENT INDICES CALCULATED FROM THE IOWA TESTS OF BASIC SKILLS, APRIL, 1973

Grade	Grade Equivalent Score			Achievement Indices	
	Actual	Predicted	Acceptable	Predicted	National
			Reading Test Data		
2	2.5	2.1	2.7	117	91
3	2.3	2.5	3.8	90	60
4	3.1	2.9	4.7	105	65
5	3.7	4.0	5.7	93	65
6	4.1	4.5	6.7	90	61
			Average	99	68
			Mathematics Test Data		
2	2.5	2.2	2.6	114	96
3	2.4	2.6	3.7	91	65
4	3.3	3.1	4.7	105	70
5	3.9	4.2	5.6	92	69
6	5.0	4.9	6.6	101	75
			Average	100	75
			Composite Test Data		
2	2.7	2.3	2.6	118	102
3	2.7	2.7	3.7	100	72
4	3.3	3.1	4.7	106	70
5	3.8	4.2	5.7	91	66
6	4.6	4.7	6.7	97	69
			Average	102	75

While the national achievement index was based on national norms, the predicted achievement index, resulting from the same study, was based on predicted scores. The predictions for each grade level were the result of a regression formula that considered past achievement, socioeconomic status, attendance, mobility, and the pupil-teacher ratio. By dividing the actual score by the predicted score the predicted achievement index was obtained which compared pupils to themselves rather than to the normed population. Indices were considered acceptable if they were 98 or higher. All indices are reported in Table 6.

In reading comprehension the average predicted achievement index for the second through sixth grades was 99, suggesting that the general population scored as predicted. However, only two of the five grades, second and fourth, actually scored as predicted on the test. The high score in the second grade, as discussed earlier in this report, resulted from the exceptional performance of one of the two second grade classes. The fourth grade pupils who were effective in this study, failed to meet the behavioral objectives set for them by the teachers that required a five-month gain over a seven-month period. It was shown that almost no gain was measured over those seven months but that considerable gain was made between April and October, 1972. The effectiveness of these pupils during the school year is therefore questionable.

Three out of five grade levels were effective in mathematics, resulting in a mean predicted achievement index of 100. As in reading, one second grade class greatly outperformed the other class, contributing heavily to the index of 114. In the fourth and sixth grades, scores were similarly distributed in both classes within each grade level.

Achievement indices were also calculated for the composite score of the ITBS. The composite score consisted of selected questions from all subtests and indicated the overall performance on the test. Grades two, three, and four had predicted achievement indices of 100 or more on this total. The sixth grade's index was 97 and their actual score was only one month less than their predicted score. The fifth grade was the only level that did not score as predicted in any area.

Observation of standardized test scores in Table 7 over the past three years showed that scores in both reading and mathematics have improved in grades one, two, and three. First grade pupils

have moved from grade level to three months beyond the norm in reading and from two months behind to one month ahead in mathematics. Second grade scores have progressed about one year and this came within one or two months of grade level, while third grade scores have risen by a few months. The sixth grade has also improved by four months in reading and three months in mathematics. Fourth and fifth grade scores have remained relatively constant.

TABLE 7

LONGITUDINAL DATA FOR STANDARDIZED ACHIEVEMENT TESTS

Grade	1970-71	1971-72	1972-73
Reading Comprehension*			
1	1.7	1.8	2.0
2	1.4	2.0	2.6
3	1.8	2.3	2.3
4	3.1	3.3	3.1
5	3.7	3.9	3.7
6	3.7	---	4.1
Mathematics**			
1	1.5	1.6	1.8
2	1.7	2.0	2.5
3	2.2	2.3	2.4
4	3.1	3.3	3.3
5	4.1	4.1	3.9
6	4.7	---	5.0

* The MAT was used in 1970-71 and 1971-72. The ITBS was used in 1972-73.

** In 1970-71 and 1971-72 the total math subtest of the MAT was used for grades one through three and the problem solving and concepts subtest was used for higher grades. In 1972-73, the total math subtest of the ITBS was used for all grades.

Improvement in the lower grades was probably at least partially attributable to the emphasis of the school system on reading in the primary grades through the Comprehensive Instructional Program (CIP). This three-year-old program has provided materials, resource personnel, and especially a diagnostic testing program. Relief from crowded facilities during 1971-72 also may have had positive effects. Nor can the factor of good teaching be ignored.

The scores in Table 7 were also used to follow particular groups of children. Most groups gained from 1.6 to 1.9 years in two years of school. However, the first grade pupils of 1970-71 have gained only six months since that time in reading, and only nine months in mathematics. Perhaps this group should be considered for special remedial instruction and/or activities to improve their self-concepts and attitudes toward school to increase their rate of improvement.

XI. COST ANALYSIS

Expenditures of both general and compensatory funds were calculated to determine the relationship between program costs and pupil achievement as measured by the predicted achievement index. From general funds, approximately $704 per pupil was spent for both salary and nonsalary expenses. In grades two through six where the Title I program operated, $47 per pupil was expended for salaries only. Materials ordered from the program were not received until May and, therefore, were not included in the expense account. Dividing the per pupil expenditures by the predicted achievement indices for each grade level from two through six yielded the cost per unit of the index, i.e., the amount of money expended for each child to achieve one unit of the predicted achievement index. This cost ranged from $5.96 to $7.74 for general funds and from $0.40 to $0.51 for compensatory funds. Since the per pupil cost was the same for every grade level, the difference in cost per unit of the index was the result of different predicted achievement indices. From this data, presented in Table 8, the conclusion was drawn that expenditures seemed generally unrelated to pupil achievement as measured by the predicted achievement index.

TABLE 8

COST ANALYSIS
1972-73 SCHOOL YEAR
TOTAL AVERAGE DAILY ATTENDANCE
GRADES K - 6 = 303

	Grades							
	Kindergarten	First	Second	Third	Fourth	Fifth	Sixth	Average
Average Daily Attendance (ADA)	23	39	43	55	53	54	36	43
Per Pupil Cost								
A. General Funds								
Regular								
a. Salary	$662	$662	$662	$662	$662	$662	$662	$662
b. Nonsalary	42	42	42	42	42	42	42	42
c. Total	$704	$704	$704	$704	$704	$704	$704	$704
B. Compensatory Funds								
Title I								
Salary	-0-	-0-	$ 47	$ 47	$ 47	$ 47	$ 47	$ 37
C. Total Per Pupil Cost								
1. Salary	$662	$662	$709	$709	$709	$709	$709	$699
2. Nonsalary	42	42	42	42	42	42	42	42
3. Total	$704	$704	$751	$751	$751	$751	$751	$741
Predicted Achievement Index	---	---	118	100	106	91	97	102
Cost Per Unit of Predicted Achievement Index								
A. General Funds	---	---	$ 5.96	$ 7.04	$ 6.64	$ 7.74	$ 7.26	$ 6.95
B. Compensatory Funds	---	---	0.40	0.47	0.44	0.51	0.48	0.46
C. Total	---	---	$ 6.36	$ 7.51	$ 7.08	$ 8.25	$ 7.74	$ 7.41

XII. CONCLUSIONS

Based on the data presented in this report, the following conclusions were drawn:

A. While kindergarten pupils did not meet the specified objective, 79 per cent scored 80 per cent or better on the spring administration of the Basecheck.

B. According to the Comprehensive Instructional Program (CIP) test results and standardized test results, first grade pupils achieved the objectives set for them and compared very favorably to national norms in reading skills and comprehension.

C. A noticable difference in achievement test scores between the two classes of the second grade may have been the result of the assistance contributed by the kindergarten teacher to the higher scoring class.

D. Most of the third grade pupils scored less than one year behind the system-wide averages for all subject areas.

E. Gains made by fourth grade pupils on standardized reading tests were greater between April, 1972, and October, 1972, than between October and April, 1973 when almost no gains were evident on the Iowa Tests of Basic Skills (ITBS).

F. Fifth and sixth grade pupils made little measurable progress in reading between April, 1972, and April, 1973.

G. The gains made by Title I pupils on the Metropolitan Achievement Tests (MAT), averaging 2.9 years, suggested that irregularities existed in the administering of the tests.

H. The Self-Appriasal Inventory failed to show any significant change in the self-concept of Title I pupils in grades four through six.

I. The study by the Research and Development Division indicated that pupil achievement in reading and mathematics was generally at the predicted level but did not approach the national norms.

J. Over the last three years, the primary grades have made progressively better scores on standardized tests while the scores of the upper level pupils have remained relatively constant. The emphasis of the Comprehensive Instructional Program (CIP) on reading in the primary grades may have contributed to their improvement.

K. Expenditures of general and compensatory funds did not correlate with pupil achievement as measured by the predicted achievement index.

XIII. RECOMMENDATIONS

The following recommendations were made in consideration of the general goals of the Robinson School program:

A. Additional inservice training should be provided at the school in all areas but particularly in reading skills and comprehension.

B. Consideration should be given to the regular use of diagnostic tests in grades four through six to provide assessment data similar to that provided by the Comprehensive Instructional Program (CIP) for the primary grades.

C. More serious consideration should be given to the definition of behavioral objectives that are attainable but also challenging to both the pupils and the teachers.

D. The principal should request the full-time services of a lead teacher for the compensatory Title I program.

E. The Title I staff should make a concerted effort to improve communication with the classroom teachers and with parents so that pupils will have the advantage of a team approach to their educational problems.

The faculty of Robinson Elementary School should be commended for their initiative and willingness in trying new techniques and programs that can improve pupil achievement. They are encouraged to continue their efforts and to share their successes with other members of the staff and with professional personnel throughout the system.

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